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<110> Kingsbury, G.
Leiby, K.

<120> COMPOSITIONS AND METHODS FOR THE DIAGNOSIS AND
TREATMENT OF IMMUNE DISORDERS

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 545 550 555 560
 Cys Leu Asp Leu Lys His Phe
 565

<210> 8
 <211> 556
 <212> PRT
 <213> Homo sapiens

<400> 8

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 Ile Val Arg Cys Pro Arg Gln Gly Lys Pro Ser Tyr Thr Val Asp Trp
 35 40 45
 Tyr Tyr Ser Gln Thr Asn Lys Ser Ile Pro Thr Gln Glu Arg Asn Arg
 50 55 60
 Val Phe Ala Ser Gly Gln Leu Leu Lys Phe Leu Pro Ala Glu Val Ala
 65 70 75 80

Asp Ser Gly Ile Tyr Thr Cys Ile Val Arg Ser Pro Thr Phe Asn Arg
 85 90 95
 Thr Gly Tyr Ala Asn Val Thr Ile Tyr Lys Lys Gln Ser Asp Cys Asn
 100 105 110
 Val Pro Asp Tyr Leu Met Tyr Ser Thr Val Ser Gly Ser Glu Lys Asn
 115 120 125
 Ser Lys Ile Tyr Cys Pro Thr Ile Asp Leu Tyr Asn Trp Thr Ala Pro
 130 135 140
 Leu Glu Trp Phe Lys Asn Cys Gln Ala Leu Gln Gly Ser Arg Tyr Arg
 145 150 155 160
 Ala His Lys Ser Phe Leu Val Ile Asp Asn Val Met Thr Glu Asp Ala
 165 170 175
 Gly Asp Tyr Thr Cys Lys Phe Ile His Asn Glu Asn Gly Ala Asn Tyr
 180 185 190
 Ser Val Thr Ala Thr Arg Ser Phe Thr Val Lys Asp Glu Gln Gly Phe
 195 200 205
 Ser Leu Phe Pro Val Ile Gly Ala Pro Ala Gln Asn Glu Ile Lys Glu
 210 215 220
 Val Glu Ile Gly Lys Asn Ala Asn Leu Thr Cys Ser Ala Cys Phe Gly
 225 230 235 240
 Lys Gly Thr Gln Phe Leu Ala Ala Val Leu Trp Gln Leu Asn Gly Thr
 245 250 255
 Lys Ile Thr Asp Phe Gly Glu Pro Arg Ile Gln Gln Glu Glu Gly Gln
 260 265 270
 Asn Gln Ser Phe Ser Asn Gly Leu Ala Cys Leu Asp Met Val Leu Arg
 275 280 285
 Ile Ala Asp Val Lys Glu Glu Asp Leu Leu Leu Gln Tyr Asp Cys Leu
 290 295 300
 Ala Leu Asn Leu His Gly Leu Arg Arg His Thr Val Arg Leu Ser Arg
 305 310 315 320
 Lys Asn Pro Ile Asp His His Ser Ile Tyr Cys Ile Ile Ala Val Cys
 325 330 335
 Ser Val Phe Leu Met Leu Ile Asn Val Leu Val Ile Ile Leu Lys Met
 340 345 350
 Phe Trp Ile Glu Ala Thr Leu Leu Trp Arg Asp Ile Ala Lys Pro Tyr
 355 360 365
 Lys Thr Arg Asn Asp Gly Lys Leu Tyr Asp Ala Tyr Val Val Tyr Pro
 370 375 380
 Arg Asn Tyr Lys Ser Ser Thr Asp Gly Ala Ser Arg Val Glu His Phe
 385 390 395 400
 Val His Gln Ile Leu Pro Asp Val Leu Glu Asn Lys Cys Gly Tyr Thr
 405 410 415
 Leu Cys Ile Tyr Gly Arg Asp Met Leu Pro Gly Glu Asp Val Val Thr
 420 425 430
 Ala Val Glu Thr Asn Ile Arg Lys Ser Arg Arg His Ile Phe Ile Leu
 435 440 445
 Thr Pro Gln Ile Thr His Asn Lys Glu Phe Ala Tyr Glu Gln Glu Val
 450 455 460
 Ala Leu His Cys Ala Leu Ile Gln Asn Asp Ala Lys Val Ile Leu Ile
 465 470 475 480
 Glu Met Glu Ala Leu Ser Glu Leu Asp Met Leu Gln Ala Glu Ala Leu
 485 490 495
 Gln Asp Ser Leu Gln His Leu Met Lys Val Gln Gly Thr Ile Lys Trp
 500 505 510
 Arg Glu Asp His Ile Ala Asn Lys Arg Ser Leu Asn Ser Lys Phe Trp
 515 520 525
 Lys His Val Arg Tyr Gln Met Pro Val Pro Ser Lys Ile Pro Arg Lys
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 Ala Ser Ser Leu Thr Pro Leu Ala Ala Gln Lys Gln
 545 550 555

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 <211> 328
 <212> PRT
 <213> Homo sapiens

<400> 9
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 Ala Ala Lys Phe Ser Lys Gln Ser Trp Gly Leu Glu Asn Glu Ala Leu
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 Ile Val Arg Cys Pro Arg Gln Gly Lys Pro Ser Tyr Thr Val Asp Trp
 35 40 45
 Tyr Tyr Ser Gln Thr Asn Lys Ser Ile Pro Thr Gln Glu Arg Asn Arg
 50 55 60
 Val Phe Ala Ser Gly Gln Leu Leu Lys Phe Leu Pro Ala Glu Val Ala
 65 70 75 80
 Asp Ser Gly Ile Tyr Thr Cys Ile Val Arg Ser Pro Thr Phe Asn Arg
 85 90 95
 Thr Gly Tyr Ala Asn Val Thr Ile Tyr Lys Lys Gln Ser Asp Cys Asn
 100 105 110
 Val Pro Asp Tyr Leu Met Tyr Ser Thr Val Ser Gly Ser Glu Lys Asn
 115 120 125
 Ser Lys Ile Tyr Cys Pro Thr Ile Asp Leu Tyr Asn Trp Thr Ala Pro
 130 135 140
 Leu Glu Trp Phe Lys Asn Cys Gln Ala Leu Gln Gly Ser Arg Tyr Arg
 145 150 155 160
 Ala His Lys Ser Phe Leu Val Ile Asp Asn Val Met Thr Glu Asp Ala
 165 170 175
 Gly Asp Tyr Thr Cys Lys Phe Ile His Asn Glu Asn Gly Ala Asn Tyr
 180 185 190
 Ser Val Thr Ala Thr Arg Ser Phe Thr Val Lys Asp Glu Gln Gly Phe
 195 200 205
 Ser Leu Phe Pro Val Ile Gly Ala Pro Ala Gln Asn Glu Ile Lys Glu
 210 215 220
 Val Glu Ile Gly Lys Asn Ala Asn Leu Thr Cys Ser Ala Cys Phe Gly
 225 230 235 240
 Lys Gly Thr Gln Phe Leu Ala Ala Val Leu Trp Gln Leu Asn Gly Thr
 245 250 255
 Lys Ile Thr Asp Phe Gly Glu Pro Arg Ile Gln Gln Glu Gly Gln
 260 265 270
 Asn Gln Ser Phe Ser Asn Gly Leu Ala Cys Leu Asp Met Val Leu Arg
 275 280 285
 Ile Ala Asp Val Lys Glu Glu Asp Leu Leu Leu Gln Tyr Asp Cys Leu
 290 295 300
 Ala Leu Asn Leu His Gly Leu Arg Arg His Thr Val Arg Leu Ser Arg
 305 310 315 320
 Lys Asn Pro Ser Lys Glu Cys Phe
 325

<210> 10
 <211> 1680
 <212> DNA
 <213> Homo sapiens

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 tcactgttgt atgccagtga ctcatctgga gtaatctcaa caacgaggtta ccaatacttg 180
 ctcttgattt ataaacagaaa tggggttttg gatcttagca attctcacaa ttctcatgta 240
 ttccacagca gcaaaggta gtaaacaatc atggggcctg gaaaatgagg ctttaattgt 300
 aagatgtcct agacaaggaa aacctagttt caccgtggat tggattact cacaacaaa 360

caaaaatatt	cccaactcagg	aaagaaaatcg	tgtgttgcc	tcaggccgac	ttctgaagtt	420
tctaccagct	gaagttgctg	attctggtat	ttataccgtt	attgtcagaa	gtccccacatt	480
caataggact	ggatatgcga	atgtcaccat	atataaaaaaa	caatcagatt	gcaatgttcc	540
agattatttg	atgtattcaa	cagtatctgg	atcagaaaaaa	aattccaaaa	tttattgtcc	600
taccattgac	ctctacaact	ggacagcacc	tcttgagttgg	tttaagaatt	gtcaggctct	660
tcaaggatca	agttacaggg	cgcacaagtgc	attttggtc	attgataatg	tgatgactga	720
ggacgcaggt	gattacaccc	gtaaaatttat	acacaatgaa	aatggagcca	attatagtgt	780
gacggcgacc	aggtccttca	cggtaaggt	ttgggtgtcag	agtttctgca	aattaaaaaa	840
gagcttaatc	tttagtaata	ctcattggat	tcaaagtcta	atgagaggct	ttgtgtatgg	900
atactatggt	gtacataaaat	gttgcgagt	gttttttaat	ctttgtttgc	aataacttca	960
acatcatcaa	tggccttgaa	tgagaaggc	ttttctctgt	ttccagtaat	cggagcccc	1020
gcacaaaatg	aaataaaagga	agtggaaatt	ggaaaaaaacg	caaaccctaa	ttgctctgct	1080
tgaaaaatggaa	aaggcactca	gttctggct	gccgtcctgt	ggcagcttaa	ttgaacaaaaa	1140
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aatgggctgg	cttgtctaga	catggttta	agaatagctg	acgtgaagga	agaggattta	1260
ttgctgcagt	acgactgtct	ggccctgaaat	ttgcatggct	tgagaaggca	caccgtaaaga	1320
ctaagttagga	aaaatccaag	taaggagtgt	ttctgagact	ttgatcacct	gaactttctc	1380
tagcaagtgt	aagcagaatg	gagtgtggtt	ccaagagatc	catcaagaca	atgggaatgg	1440
cctgtgccat	aaaatgtgct	tctcttcttc	gggatgttgt	ttgctgtctg	atctttgttag	1500
actgtttctg	tttgtggga	gcttcctgc	tgcttaaatt	gttgccttc	ccccactccc	1560
tcctatcggt	ggtttgtcta	gaacactcag	ctgcttcttt	ggtcatcctt	gttttctaacc	1620
tttatgaact	ccctctgtgt	cactgtatgt	gaaaggaaat	gcaccaacaa	ccgaaaactg	1680

<210> 11
<211> 259
<212> PRT
<213> *Homo sapiens*

<400> 11
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 Ile Val Arg Cys Pro Arg Gln Gly Lys Pro Ser Tyr Thr Val Asp Trp
 35 40 45
 Tyr Tyr Ser Gln Thr Asn Lys Ser Ile Pro Thr Gln Glu Arg Asn Arg
 50 55 60
 Val Phe Ala Ser Gly Arg Leu Leu Lys Phe Leu Pro Ala Glu Val Ala
 65 70 75 80
 Asp Ser Gly Ile Tyr Thr Cys Ile Val Arg Ser Pro Thr Phe Asn Arg
 85 90 95
 Thr Gly Tyr Ala Asn Val Thr Ile Tyr Lys Lys Gln Ser Asp Cys Asn
 100 105 110
 Val Pro Asp Tyr Leu Met Tyr Ser Thr Val Ser Gly Ser Glu Lys Asn
 115 120 125
 Ser Lys Ile Tyr Cys Pro Thr Ile Asp Leu Tyr Asn Trp Thr Ala Pro
 130 135 140
 Leu Glu Trp Phe Lys Asn Cys Gln Ala Leu Gln Gly Ser Arg Tyr Arg
 145 150 155 160
 Ala His Lys Ser Phe Leu Val Ile Asp Asn Val Met Thr Glu Asp Ala
 165 170 175
 Gly Asp Tyr Thr Cys Lys Phe Ile His Asn Glu Asn Gly Ala Asn Tyr
 180 185 190
 Ser Val Thr Ala Thr Arg Ser Phe Thr Val Lys Val Trp Cys Gln Ser
 195 200 205
 Phe Cys Lys Leu Lys Lys Ser Leu Ile Phe Ser Asn Thr His Trp Ile
 210 215 220
 Gln Ser Leu Met Arg Gly Phe Val Met Val Tyr Tyr Gly Val His Lys
 225 230 235 240
 Cys Cys Arg Val Val Phe Asn Leu Cys Leu Gln Tyr Phe Gln His His
 245 250 255

Gln Trp Pro

<210> 12
 <211> 1210
 <212> DNA
 <213> Homo sapiens

 <220>
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 Met Gly Phe Trp Ile Leu Ala Ile Leu Thr
 1 5 10

 att ctc atg tat tcc aca gca gca aag ttt agt aaa caa tca tgg ggc 161
 Ile Leu Met Tyr Ser Thr Ala Ala Lys Phe Ser Lys Gln Ser Trp Gly
 15 20 25

 ctg gaa aat gag gct tta att gta aga tgt cct aga caa gga aaa cct 209
 Leu Glu Asn Glu Ala Leu Ile Val Arg Cys Pro Arg Gln Gly Lys Pro
 30 35 40

 agt tac acc gtg gat tgg tat tac tca caa aca aac aaa agt att ccc 257
 Ser Tyr Thr Val Asp Trp Tyr Ser Gln Thr Asn Lys Ser Ile Pro
 45 50 55

 act cag gaa aga aat cgt gtg ttt gcc tca ggc caa ctt ctg aag ttt 305
 Thr Gln Glu Arg Asn Arg Val Phe Ala Ser Gly Gln Leu Leu Lys Phe
 60 65 70

 cta cca gct gca gtt gct gat tct ggt att tat acc tgt att gtc aga 353
 Leu Pro Ala Ala Val Ala Asp Ser Gly Ile Tyr Thr Cys Ile Val Arg
 75 80 85 90

 agt ccc aca ttc aat agg act gga tat gcg aat gtc acc ata tat aaa 401
 Ser Pro Thr Phe Asn Arg Thr Gly Tyr Ala Asn Val Thr Ile Tyr Lys
 95 100 105

 aaa caa tca gat tgc aat gtt cca gat tat ttg atg tat tca aca gta 449
 Lys Gln Ser Asp Cys Asn Val Pro Asp Tyr Leu Met Tyr Ser Thr Val
 110 115 120

 tct gga tca gaa aaa aat tcc aaa att tat tgt cct acc att gac ctc 497
 Ser Gly Ser Glu Lys Asn Ser Lys Ile Tyr Cys Pro Thr Ile Asp Leu
 125 130 135

 tac aac tgg aca gca cct ctt gag tgg ttt aag atg agc aag gct ttt 545
 Tyr Asn Trp Thr Ala Pro Leu Glu Trp Phe Lys Met Ser Lys Ala Phe
 140 145 150

 ctc tgt ttc cag taatcgagc ccctgcacaa aatgaaataa aggaagtggaa 597
 Leu Cys Phe Gln
 155

 aattggcact cagttcttgg ctgccgtcct gtggcagctt aatggAACaa aaattacaga 657
 ctttggtaa ccaagaattc aacaagagga agggcaaaat caaagttca gcaatggct
 qgcttqtcata gacatggttt taagaatagc tgacgtgaag qaagaggatt tattgctgca
 717
 777

gtacgactgt ctggccctga atttgcattgg cttgagaagg cacaccgtaa gactaagtag	837
gaaaaatcca agtaaggagt gtttctgaga ctttgcac ctgaacttgc tctagcaagt	897
gtaagcagaa tggagtgtgg ttccaagaga tccatcaaga caatggat ggcctgtgcc	957
ataaaatgtg cttcttcttc tcggatgtt gtttgcgtc tgatcttgc agactgttcc	1017
tgtttgcgtt gagcttctt gctgtttaaa ttgttgcgtcc tcccccaactc cctccatcg	1077
ttggtttgcgtt tagaacactc agctgcttct ttgttgcgtcc ttgtttctaa actttatgaa	1137
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aaggcgcc gct	1210

<210> 13
 <211> 158
 <212> PRT
 <213> Homo sapiens

<400> 13	
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20 25 30	
Ile Val Arg Cys Pro Arg Gln Gly Lys Pro Ser Tyr Thr Val Asp Trp	
35 40 45	
Tyr Tyr Ser Gln Thr Asn Lys Ser Ile Pro Thr Gln Glu Arg Asn Arg	
50 55 60	
Val Phe Ala Ser Gly Gln Leu Leu Lys Phe Leu Pro Ala Ala Val Ala	
65 70 75 80	
Asp Ser Gly Ile Tyr Thr Cys Ile Val Arg Ser Pro Thr Phe Asn Arg	
85 90 95	
Thr Gly Tyr Ala Asn Val Thr Ile Tyr Lys Lys Gln Ser Asp Cys Asn	
100 105 110	
Val Pro Asp Tyr Leu Met Tyr Ser Thr Val Ser Gly Ser Glu Lys Asn	
115 120 125	
Ser Lys Ile Tyr Cys Pro Thr Ile Asp Leu Tyr Asn Trp Thr Ala Pro	
130 135 140	
Leu Glu Trp Phe Lys Met Ser Lys Ala Phe Leu Cys Phe Gln	
145 150 155	

<210> 14
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> sense primer

<400> 14	
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<210> 15
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> antisense primer

<400> 15	
tgctgtccaa ttatacagg	19

<210> 16
 <211> 22
 <212> DNA

<213> Artificial Sequence	
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<223> sense primer	
<400> 16	
gaacacggca ttgtcactaa ct	22
<210> 17	
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<223> antisense primer	
<400> 17	
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<223> forward primer	
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tgtgacggcg accaggt	17
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<211> 23	
<212> DNA	
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<223> reverse primer	
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tctctgttcc cagtaatcg agc	23
<210> 20	
<211> 26	
<212> DNA	
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ttcacggtca aggatgagca agcctt	26
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<213> Artificial Sequence	
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<223> forward primer	
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caccccccact gaaaaagatg a	21
<210> 22	
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<220>	
<223> reverse primer	
<400> 22	
cttaactatc ttgggctgtg acaaag	26
<210> 23	
<211> 24	
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<223> TaqMan probe	
<400> 23	
tatgcctgccc gtgtgaacca cgtg	24
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<212> DNA	
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ccgcgggtac cagtaaatcg tcctgggtg g	31
<210> 25	
<211> 36	
<212> DNA	
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<223> 3' oligonucleotide	
<400> 25	
aaataaaagga tccctacatc cagcaactat gtagta	36
<210> 26	
<211> 38	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> 5' oligonucleotide	
<400> 26	
gaacacacta gtactatcct gtgccattgc catagaga	38
<210> 27	
<211> 44	
<212> DNA	
<213> Artificial Sequence	

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<223> 3' oligonucleotide		
<400> 27		
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<210> 28		
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<212> DNA		
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<223> 5' oligonucleotide		
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gtaaatcgta ctggggctcg g	21	
<210> 29		
<211> 25		
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<400> 29		
ccttctgata acacaaggcat aaatc	25	
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acggagggca gtaaaatc	17	
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cagccaagaa gtgagagc	18	
<210> 32		
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tgttgcggta atccagcctc ag	22	

<210> 33
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<220>
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<400> 33

gtccccccacc cccagataca acc

23

<210> 34
<211> 5
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<213> Artificial Sequence

<220>
<223> linker

<400> 34

Ala-Ala-Ala-Asp-Pro

1

5